My Universe

v0.1

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Contents

1 Introduction

I have attempted to define a universe. It is a work in progress and might have bugs.

2 Meta

The newest version of this work is available at `http://metanohi.name/projects/myuniverse/`. This is version 0.1.

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3   The Basics

Let us define the basic assumptions of the universe.

> **Axiom 3.1** (Existence). *Let x be something. We have*
>
> $$x$$
>
> *In other words, x exists.*

This axiom is very useful.

> **Axiom 3.2** (Nonexistence). *Let x be nothing. We have nothing. In other words, x does not exist.*

To make the universe more interesting we need more basic truths.

> **Axiom 3.3** (Comparability). *Let x exist and y exist. x and y can be compared.*

> **Axiom 3.4** (Difference). *Let x exist and y exist. We have*
>
> $$x \neq y$$
>
> *That is, some x can exist where something which is not x exists.*

> **Corollary 3.1** (Existence of at least two things (Axiom 3.4)). *Let x exist and y exist, and require that x $\neq$ y. We have*
>
> $$x, \quad y$$
>
> *It follows from Axiom 3.4 that both x and y can exist.*

This is far from enough.

> **Theorem 3.1** (Multiple differences). *We have*
>
> $$y, \quad x \neq y \qquad \forall x$$
>
> *In other words, for all x, something can exist which is not x.*

Proof 3.1 (Multiple differences (Theorem 3.1)). *Let x exist. According to Axiom 3.4, some y exists for which something which is not y also exists. If x = y, we are done; otherwise, it must be the case that x ≠ y, in which case we are also done.* □

Support for multiple differences is not useful if there is not support for the existence of more than two things.

Axiom 3.5 (Existence of more than two things). *Let n, where n > 2, be the number of things that exist. They exist.*

Now we have a nice little universe to play with.

4   The Next Level

I think my universe is quite nice as it is, but surely it can be improved, and more details can be extrapolated from the existing truths.